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have identified in New Mexico as the Trias, and is of the usual red color. The occurrence of a terrestial Dinosaurian at that locality tends to confirm the conclusion to which I have already attained, that this immensely extended deposit is of lacustrine character.

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*On a New Proboscidian.*

By E. D. COPE.

(*Read before the American Philosophical Society, March 2, 1877.*)

I recently received from a correspondent in one of the Southern States, a fossil of unusual interest. It is a molar tooth of a proboscidian, whose color and mineral character indicate that it was derived from beds of the Upper Miocene or Loup Fork epoch. Its roots are largely broken away, while the crown is nearly perfect.

The crown consists chiefly of two transverse crests, which are separated by a deep uninterrupted valley. There is no general cingulum. Each crest is divided into three lobes, which are not deeply separated, but cause the edge of the crest to be serrate with three conic eminences. Of these the median apex has a rounder section, while the lateral are more transverse, rising at the external borders like the extremities of the crests in *Mastodon ohioicus*. The appearance of the base of the crown at one extremity indicates that it was in contact with the preceding tooth. The opposite extremity of the base presents no such surface, and hence points to the conclusion that the tooth is the last one of the series. From the middle cone of the anterior crest a cingulum descends on each side, passing round the anterior base of the external cones. It is wanting at the extremity of the base of one of these, and little developed on the other, but they reappear on the side of the base bounding the valley. They are crenately tubercular, except at the base of the median anterior tubercle. There is no cingulum at the base of the posterior crest, except the ordinary filling between the bases of the lobes. One of the extremities of the crests is a little higher than the other, and the basis is a little wider than at the other end; it is therefore probably external in position. At the posterior base of this end is a fractured surface indicating a cingular tubercle of stout proportions, such as is more in place at the external posterior angle of the last superior molar than in any other tooth.

The external cone is defined from the median by a fissure, while a better defined depression separates the median from the internal. This depression is filled by a worn tubercle in the anterior crest. Ridges descend along the adjacent borders of the constituent cones nearly to the fundus of the valley, and the bases of the external ones are considerably wrinkled.

| <i>Measurements.</i>                              | <i>M.</i> |
|---|-----------|
| Transverse diameter of crown.....                 | .130      |
| Longitudinal    "         "         internal..... | .070      |
| "         "         "         external .....      | .090      |

|  |      |
|--|------|
| Elevation of external cusp.....              | .065 |
| “ internal “ .....                           | .055 |
| Length between apices of external cusps..... | .043 |

The molar tooth described exceeds in transverse dimensions that of the *Mastodon ohioicus*, and evidently belonged to one of the most colossal of land animals. Its generic position is near to *Mastodon* and *Dinotherium*, but if the tooth on which my observations are based be complete, it is distinct from either. The possession of only two transverse crests separates it from the former, and would, were the tooth an anterior molar, refer it to the latter. As it appears to be a posterior molar, this view of its affinity becomes untenable, and I therefore establish for it a new genus, under the name *CÆNOBASILEUS*. The tooth described resembles that of the genus *Tapirus*, but differs in the absence of the external trihedral enlargement of the cross crests seen in the superior molars of the former, and also in the tubercular and fissured character of the crests proper. The species may be called *C. tremontigerus*.

The typical specimen was probably obtained in Texas, but I am not yet informed as to the precise locality.

## CONTRIBUTIONS FROM THE LABORATORY OF THE UNIVERSITY OF PENNSYLVANIA.

### No. VIII.

*On the Composition of the Natural Gas from certain Wells in Western Pennsylvania and New York.*

BY SAMUEL P. SADTLER.

(Read before the American Philosophical Society, March 2, 1877.)

In February, 1876, I read before this Society a paper giving some results obtained in the analysis of the natural hydrocarbon gases of Western Pennsylvania. The material examined at that time consisted of the gases from the Burns Well and the Harvey Well in Butler Co., from the Rogers Well in Westmoreland Co., and the Cherry Tree Well in Indiana Co.

During the past summer I was again engaged in the service of the Second Geological Survey of the State, and spent a month in the Oil regions of Pennsylvania. While on this trip I collected six new lots of natural gases and have recently completed my examination of them.

These gases were the following :

1. A new sample from the Harvey Well in Butler County. This was taken as in the previous case from the delivery pipe in Spang, Chalfant & Co.'s Mills at Etna, Alleghany County, Pa. An interval of nine months had elapsed and I wished to see if any differences in its chemical composition could be made out as having occurred in the meantime.
2. From a Well near Sheffield Station on the Philadelphia and Erie